

Remarks/Arguments

Applicant thanks the Examiner for careful consideration of the application.

Applicant notes with appreciation that claims 1, 5, 7-8, 13, 17-21, 24, 26, 29, 34, 37, 39-48, 50-53 have been allowed.

Applicant amends claims 2-4, 6, 9-12, 14-16, 22-23, 25, 27-28, 30-33, 35-36, and 38.

Applicant cancels claims 54-56 without prejudice, and their content reserved for inclusion in a continuation/divisional application.

I. Election/Restrictions:

Examiner has restricted claims 55 and 56. Applicant notes for the record claims 55 and 56 were not newly added but rather claims 55-56 were originally pending in this application. Applicant amended claims 55 and 56 in the previous response. Applicant traverses Examiner's restriction; however in the interests of furthering prosecution and to expedite the issuance of a patent Applicant has cancelled claims 54-56 making Examiner's election/restriction requirement moot at this time.

II. Rejections under 35 U.S.C. §112:

On page 2 of the Office Communication Examiner has rejected claims 2-4, 6, 9-12, 14-16, 22-23, 25, 27-28, 30-33, 35-36, and 38 under 35 U.S.C. §112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 2-4, 6, 9-12, 14-16, 22-23, 25, 27-28, 30-33, 35-36, and 38 Examiner states that it is unclear what is meant by the phrase "further" comprises." Applicant believes that dependent claims 2-4, 6, 9-12, 14-16, 22-23, 25, 27-28, 30-33, 35-36, and 38 are not indefinite. Applicant continues to respectfully traverse Examiner's

rejection because Applicant believes Examiner has failed to establish a prima facie case of indefiniteness. However, in the interests of furthering prosecution and to expedite the issuance of a patent Applicant has amended claims 2-4, 6, 9-12, 14-16, 22-23, 25, 27-28, 30-33, 35-36, and 38 to remove the word "further" from the claim. Applicant believes that such an amendment overcomes Examiner's rejection based on 35 U.S.C. §112. Applicant further submits that these amendments are non-narrowing pursuant to *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 122 S. Ct. 1831 (2002). Therefore, Applicant respectfully requests Examiner withdraw the rejection of claims 2-4, 6, 9-12, 14-16, 22-23, 25, 27-28, 30-33, 35-36, and 38 under 35 U.S.C. §112 second paragraph.

In regards to dependent claim 31 Examiner states "it is unclear whether the claimed 'pre-cleaning' is an additional sputtering step separate from the 'cleaning' of claim 29." Dependent claim 31 discloses "wherein cleaning said first layer region comprises sputter pre-cleaning said first layer region." Applicant believes that dependent claim 31 is not indefinite. Applicant respectfully traverses Examiner's rejection. Applicant believes Examiner has failed to establish a prima facie case of indefiniteness. Applicant believes that "sputter pre-cleaning said first layer region" is clear on its face and even if not clear on its face it is clear when read in view of the specification. Applicant asserts that "sputter pre-cleaning said first layer region," is clear and unambiguous. Applicant asserts that "sputter pre-cleaning," is a common term used in the art of sputter deposition. Applicant believes that the meaning of "sputter pre-cleaning" is apparent from the descriptive portion of the specification with clear disclosure as to its import." *See*, MPEP §608.01(o). *See also* 37 C.F.R. §1.75. Applicant further believes that claim 31, when read in light of the specification; reasonably apprises those skilled in the art both of the utilization and scope of the invention, as well as being as precise as the subject matter permits. *See e.g. North Am, Vaccine, inc. v. American Cyanamid Co.*, 7 F.3d 1571, 28 USPQ 2d 1333, 1339 (Fed Cir. 1993). Accordingly Applicant believes that Examiner's rejection of claim 31 under 35 U.S.C. §112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been overcome. Therefore, Applicant respectfully requests Examiner withdraw the rejection of claim 31 under 35 U.S.C. §112 second paragraph. If Examiner does not withdraw the

rejection of claim 31 under 35 U.S.C. §112 Applicant respectfully requests that Examiner provide in the Advisory Action a more detailed and reasoned explanation of how Examiner finds the term "sputter pre-cleaning" indefinite on its face and more particularly when read in light of the specification in order to clarify the issues to be addressed in Applicant's Appeal Brief.

II. Rejections under 35 U.S.C. §102(e):

Examiner, on page 4 of the Office Communication has rejected claims 49 and 54 under 35 U.S.C. §102(b) as being anticipated by Colgan et al. (U.S. Patent No. 5,221,449, "Colgan"), as being anticipated by Chen et al. (U.S. Patent Pub. No. 2003/0124262, "Chen"), and as being anticipated by Koyama et al. (U.S. Patent No. 4,364,099, "Koyama"). These rejections are respectfully traversed with regard to claim 49 because all of the elements of the claimed invention are not present in the cited references.

In regards to claim 54 Applicant for the record notes that Examiner's statement "for reasons of record in the Office Action mailed on 7 October 2005," is incorrect since Examiner in the previous Office Communication did not reject claim 54 under 35 U.S.C. §102. However, in terms of the current rejection Examiner's rejection is moot since claim 54 has been cancelled.

In regards to independent claim 49, Examiner appears to confuse claim 49 with claim 54 since on page 4 of the Office Communication Examiner rejects claim 49 under 35 U.S.C. §102 three times based on 3 different cited references and in each case referring to the limitation "a means for generating lateral temperature gradient," which does not exist in claim 49 but did exist in cancelled claim 54. For purposes of this response Applicant assumes that Examiner meant to reject claim 49 on the basis outlined on page 5 of the Office Communication. In particular, Examiner is now rejecting claim 49 on the basis that two Ta layers are the same as a single Ta layer and that when turned on its edge the two layers have two regions. Applicant further assumes that Examiner may still be maintaining the assertion stated in the previous Office Communication that in view of the formation by sputtering the claimed stress

requirements are satisfied. Applicant respectfully requests that if Examiner does not withdraw the rejection of claim 49 under 35 U.S.C. §102 that Examiner provide in the Advisory Action a detailed and reasoned explanation of the basis for Examiner's rejection of claim 49 for each reference Examiner has cited in order to clarify the issues to be addressed in Applicant's Appeal Brief.

Amended independent claim 49 discloses "*a tantalum layer having therein a substantially bcc-phase tantalum region contiguous to a non-bcc-phase tantalum region, wherein said substantially bcc-phase tantalum region and said non-bcc-phase tantalum region each have a compressive residual stress*" *Emphasis added.*

In contrast, as previously argued by Applicant all three references teach the utilization of two tantalum layers not a tantalum layer as claimed in the instant specification. Examiner in the previous Office Communication stated that the cited references teach a bcc Ta layer and a non-bcc Ta layer that are contiguous. Applicant in previous response attempted to point out to Examiner that two tantalum layers are not "a tantalum layer having therein a substantially bcc-phase tantalum region contiguous to a non-bcc-phase tantalum region," as claimed by Applicant in the instant specification. Examiner in this Office Communication again states on the record that each reference teaches a "bilayer" and then argues that the bilayer when turned on its edge is also the claimed layer having two claimed regions. Applicant asserts that such an argument is improper and unreasonable. Applicant asserts that Examiner cannot logically argue that two layers when turned on its edge become a layer. By looking at two layers edge on one still has two layers not a layer, and therefore it does not matter whether the two layers edge on have two edge regions, which Applicant believes is an extreme and unreasonable interpretation of Applicant's claim language.

In addition, in this Office Communication Examiner makes no mention of the limitation that each region has a compressive residual stress thus even if Examiner for purposes of arguing is correct that the two layers somehow become one when viewed edge on Examiner appears to ignore the fact that claim 49 also includes the limitation "wherein said substantially bcc-phase tantalum region and said non-bcc-phase tantalum

region each have a compressive residual stress." Applicant asserts that, Examiner by admitting on the record that all of the prior art references teach two tantalum layers, Examiner cannot reasonably argue that the two layers would be expected to have the claimed stress requirements. Thus, even if Examiner is correct that two tantalum layers somehow can be redefined as a tantalum layer, which Applicant argues is improper, Examiner cannot ignore the fact that the two layers would not be expected to have the claimed stress requirement. If Examiner maintains the rejection of claim 49 based on the three cited references, Applicant respectfully request that Examiner provide a more detailed and reasoned argument how Examiner can logically interpret, in the prior art of record, the deposition of two tantalum layers as "a tantalum layer having therein a substantially bcc-phase tantalum region contiguous to a non-bcc-phase tantalum region," as well as provide a reference that clearly indicates, as Examiner previously asserted, the deposition of two tantalum layers, as disclosed in the cited prior art, would be expected to have the claimed stress requirements in order to clarify the issues to be addressed in Applicant's Appeal Brief. Accordingly, Applicant believes that none of the three cited references anticipates independent claim 49. *See* MPEP 2131. Therefore, Applicant respectfully requests that the Examiner withdraw the rejection of claim 49 based on the three cited references under 35 U.S.C. § 102(b)

HEWLETT-PACKARD COMPANY
Legal Department, IPA Section, ms: 35
P O BOX 272400
Fort Collins, CO 80528-9599

PATENT APPLICATION

Attorney Docket No: 200312702-1
Application No. 10/825,841


Therefore, in view of the foregoing Amendment and Remarks, Applicant believes the present application to be in a condition suitable for allowance. Examiner is respectfully urged to withdraw the rejections, reconsider the present Application in light of the foregoing Amendment, and pass the amended Application to allowance.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is respectfully requested to call Applicant's representative at (541) 715-1694 to discuss the steps necessary for placing the application in condition for allowance.

Favorable action by the Examiner is solicited.

Hewlett-Packard Company
1000 NE Circle Blvd. m/s 422B
Corvallis, OR 97330
(541) 715-1694

Respectfully submitted,
Arjang Fartash

By: 
Donald J. Coulman
Reg. No. 50,406
Attorney for Applicant
Date: 27-June-06